

THE B&O MODELER

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**THE FIRST B&O WAGONTOP CABOOSE - I-5A C-2501
1947 B&O CONCRETE AND STEEL COAL DUMP TRESTLE**

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Editor – Bruce D. Griffin at bruce_griffin@earthlink.net

Associate Editor – Greg LaRocca at microbando@yahoo.com

Associate Editor – Benjamin Hom at b.hom@att.net

Did You See It? Editor – Ross Pollock at info@borhs.org

Model Products News Editor – Clark Cone at cconess@carolina.rr.com

Modeling Committee Chair – Bill Barringer at barbllsn@aol.com

Index Editor - Jim Ford at jimford40@sbcglobal.net

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Cover Photos – Top, B&O I-5a #C2501– Chris Tilley photo. Bottom, Coal Trestle – Ed Bommer photo.

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

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Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

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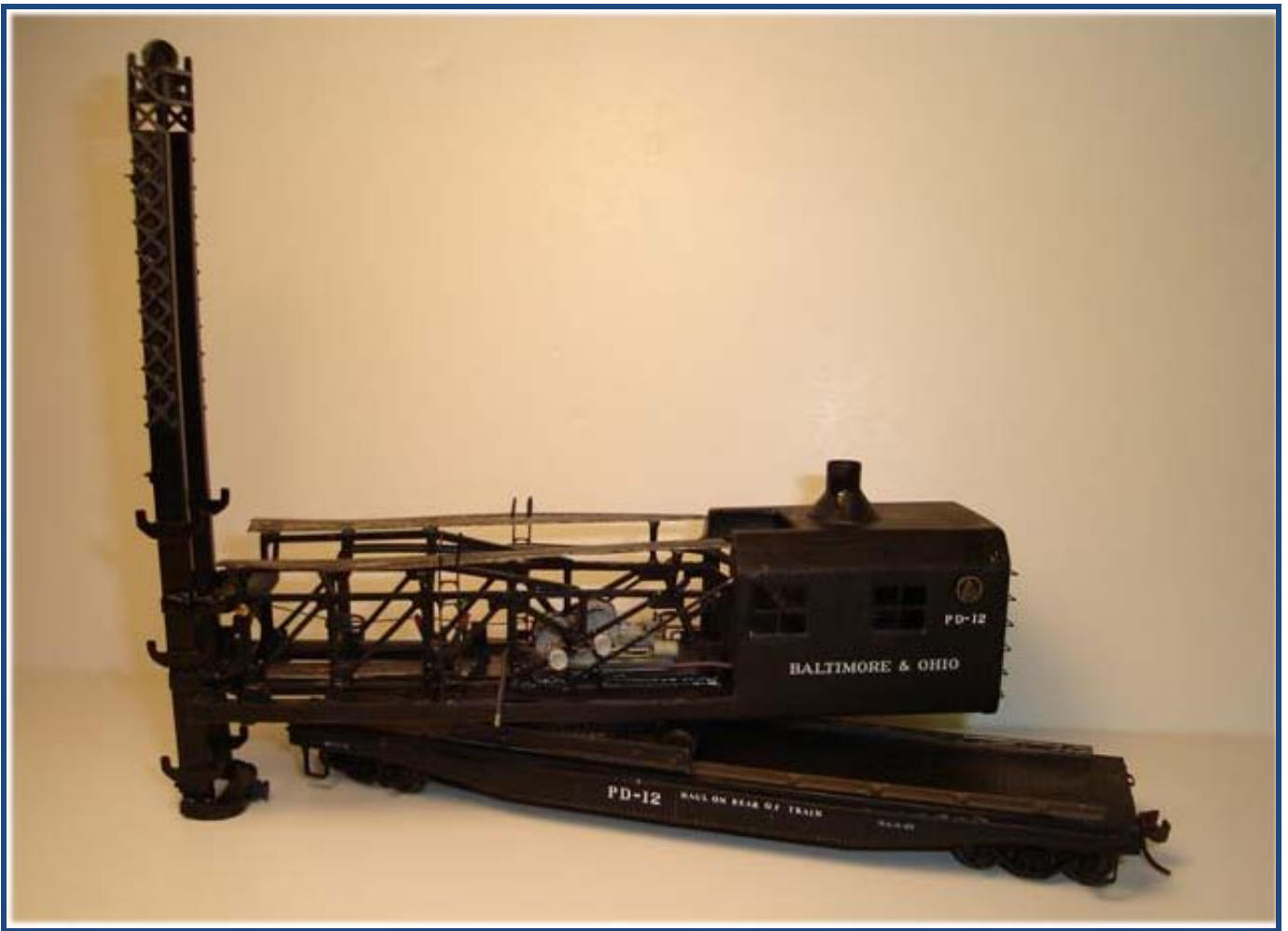
Baltimore, MD 21227-0568

FROM THE EDITOR

2010 Convention

I am pretty excited about the location of the 2010 B&O RR Historical Society, Baltimore. "Why?" you ask. Well it's where I grew up. It was also where I got my first job, it was with the B&O as a trackman based in Aberdeen. It should be fun to see those same places almost thirty years later. I hope the folks putting together the convention take me back to some of my favorite locations and that we have a good space to display models at the motel. Another hope

is that the folks putting together this convention get all the help and support they need from the membership. Each year, the convention is planned and executed by a very small group of dedicated members. Sometimes that works out easier for planning, but it can limit what gets done and the activities we can enjoy together. If you live in the Baltimore area, consider helping out your friends who are working right now to plan a great event for us.



HO Scale Pile Driver, PD-12. Chris Tilley Model and Photograph

MODEL PRODUCT REVIEWS

EDITOR NEEDED

HO Scale

Intermountain 70 Ton, 53' 6" Flatcar, Class P-31

By William Hanley with input from Byron Rose. Model photography by the authors.



With the arrival of the anxiously awaited Intermountain 70 Ton, 53' 6" Class P-31 flatcar, I immediately compared it with the Protowest resin kit of the same car, along with prototype data and came to a number of conclusions. As the car came out of the box, it was rather pleasing. The model represents a B&O Class P-31 flat car. The prototype entered B&O service in 1953 after being assembled at the DuBois, PA shops from purchased components. The model certainly captures the look of the P-31 with the advantage being that it is ready to place on a layout. It has a nice weight, which is a plus. It also comes with Kadee #5 couplers – another plus!

After getting over my initial excitement, I looked over the car with a more critical eye. The thickness of the laser-cut wood deck is a distraction. Either the deck is too thick or the metal above the body bolsters and the draft gear is not high enough. The height of the two should match – they do not! The next items to catch my eye were the air hoses. The brackets extend too far from the end sill while the air hoses are somewhat horizontal. They should “droop”! Because of their placement, the air hoses interfere with the free swing of the couplers.

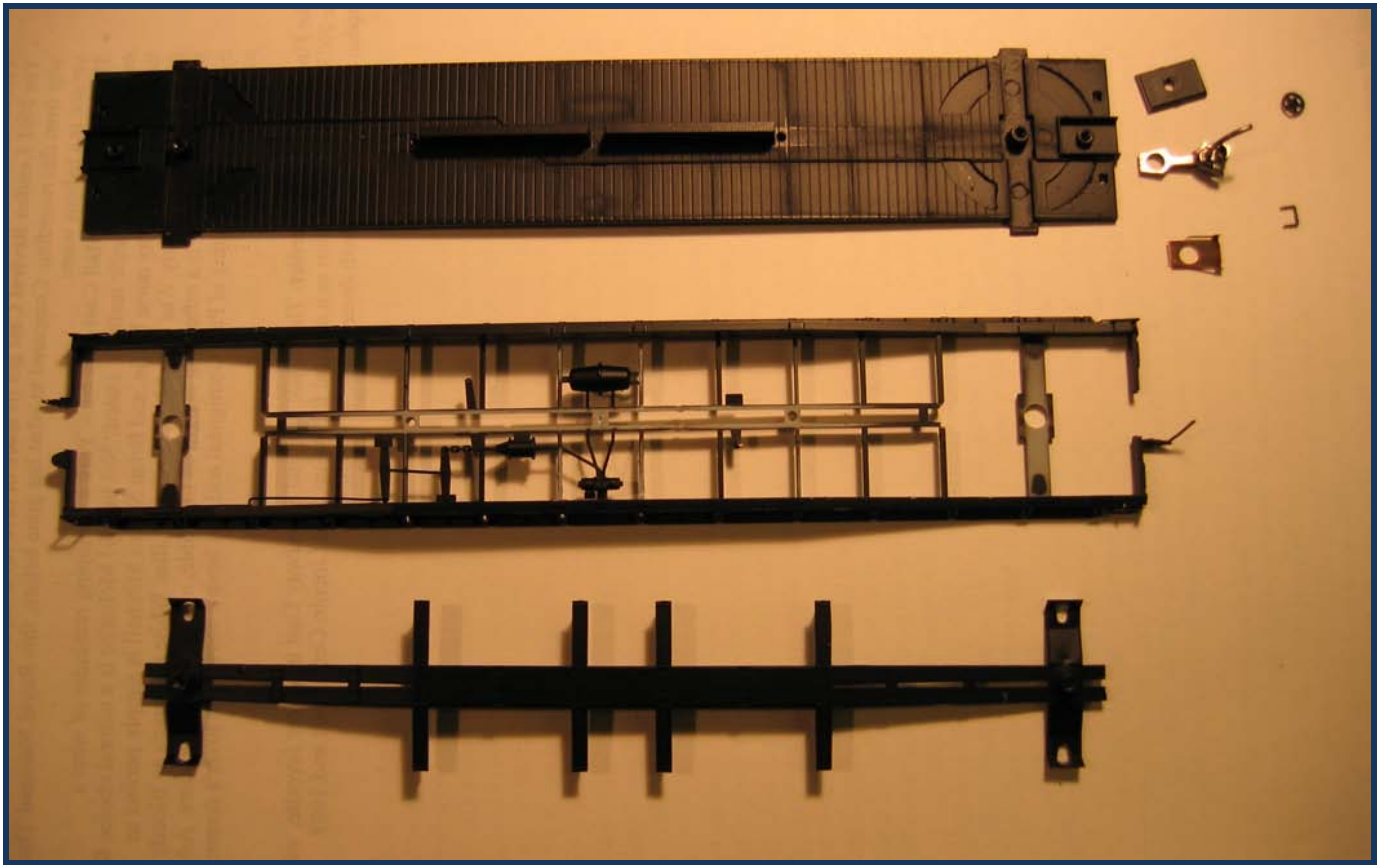
The next discrepancy I noted was the stake pockets. Not only were they of the wrong shape, but they did

not align correctly with the cross ties. The angle of the pocket should be about 60 degrees, not the approx. 35 degrees as modeled. As to placement, the cross ties should align with one edge of the pocket, not centered on the pocket. There is also a complete absence of the four “z” braces representing the longitudinal supports. This weakens the floor.

Finally, the brake rigging was scrutinized. It has a lever attached to the brake cylinder which would be correct if the car had a side mounted brake wheel, but it has an end mounted brake wheel. The paint application is good and the graphics were crisp and accurate. Nice job!

In conclusion, I have pointed out some weaknesses on the model but it does capture the essence of the P-31. If you want B&O flat cars in a hurry the Intermountain car will suffice; however, if extreme accuracy is your desire and if you have the modeling skills and inclination - the Protowest car is better suited. The manufacturer's suggested retail price is \$29.95.

The photograph below shows an exploded view of the flatcar's components. The laser-cut wood floor (not shown) is attached using double sided tape.



THE FIRST B&O WAGONTOP CABOOSE - I-5A C-2501 KITBASH

BY: CHRIS TILLEY

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



Introduction

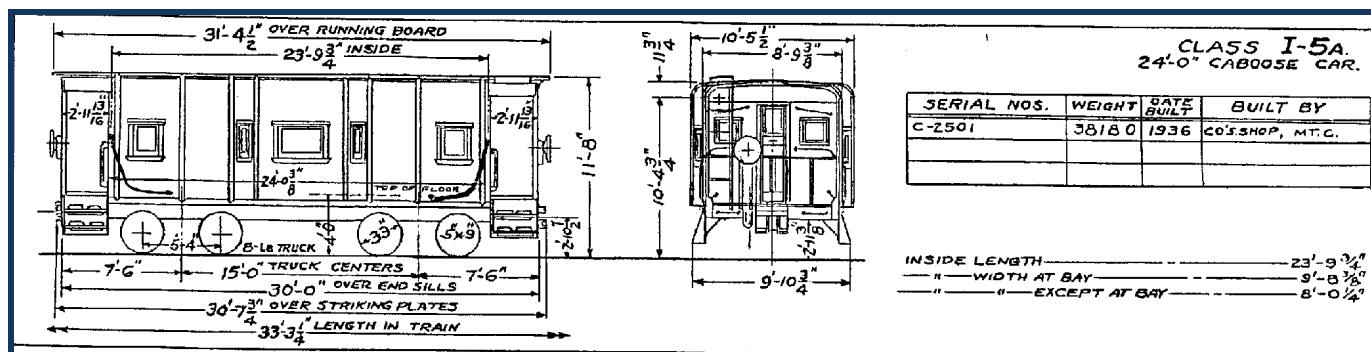
This article is written as a result of coercion but that's okay because sometimes authors need a little prod to get started. Bill Hanley saw the pictures posted of this model on the Yahoo page and suggested that an article be produced.

This kitbash began with a Pacific Mountain Scale Shops I-12 caboose kit which is an excellent model on its' own merit. Chopping one of those up at 50 bucks a pop is a STRESSFUL proposition at best, but the good news is that they are going back into production soon by Smoky Mountain Model Works. The main differences between the I-12 and the I-5A are the shorter wheel base, the "skirt" along the bottom of the carbody, some end details, and the roofwalk.

The Prototype

The I-7 class C-2500 was the B&O's first bay window caboose. It had conventional flat roof and side construction and was built shortly before the I-5A C-2501. Although not the first bay window

caboose on the B&O, C-2501 was the first of many wagontop cabooses on the B&O. C-2501 was built on the underframe of a wrecked I-1A C-419 in late 1935. As built it had a 15-foot wheelbase, no toolbox, and the brake wheels were on the outside of the end railings, facing away from the operator on the platform. This caboose featured the slotted back steps that became a trademark of B&O cabooses until the I-17A, *but* they appear to be several inches wider than those on the I-5 and I-12 classes. After trading several emails with Dwight Jones it became clear that the wheelbase remained at 15 feet until 1954 when it was changed to 19 feet for better stability when used in front of pusher locomotives like many of the other I-5's. Other details were changed over the years as well. It has not been possible thus far to determine when the brake wheels were turned to face the operator on the porch, or if the typical-for-B&O ladder extensions above the roofline were ever added. There is an excellent 1965 color photo of C-2501 with the 19-foot wheel base on page 131 of Bob Hubler's B&O Caboose book.



Bob Hubler Collection

The Model

Start construction by cleaning up the castings as suggested by the kit's directions. Measure and record the overall length of the underframe for later reference. Drill the recommended truck screw holes in the bolsters per the instructions. If building the I-5A with 19-foot wheelbase, skip the following steps and go to the next paragraph. Measure longitudinally and mark the center of the underframe. Mark for cuts at the outer edge of the body bolsters and at 6'9" from the center mark (See Figure 1). Cut with a razor saw, taking care to make sure the cuts remain square. This will result in two end sill pieces, two body bolster pieces, and a center section. Flip the

body bolsters around and position against the center section. Measure from center to center of the truck screw holes and add strip styrene shims between to the joints or file away material to make the center to center distance exactly 15 feet. Glue to the center section with ACC taking great care to make sure that everything stays flat. The caboose will not stay on the tracks if there is even the slightest twist in this assembly. Add styrene strip shims to the outer ends of the body bolster section and glue on the end sections. The result should be the same length as the original underframe, but with a four foot shorter wheelbase.

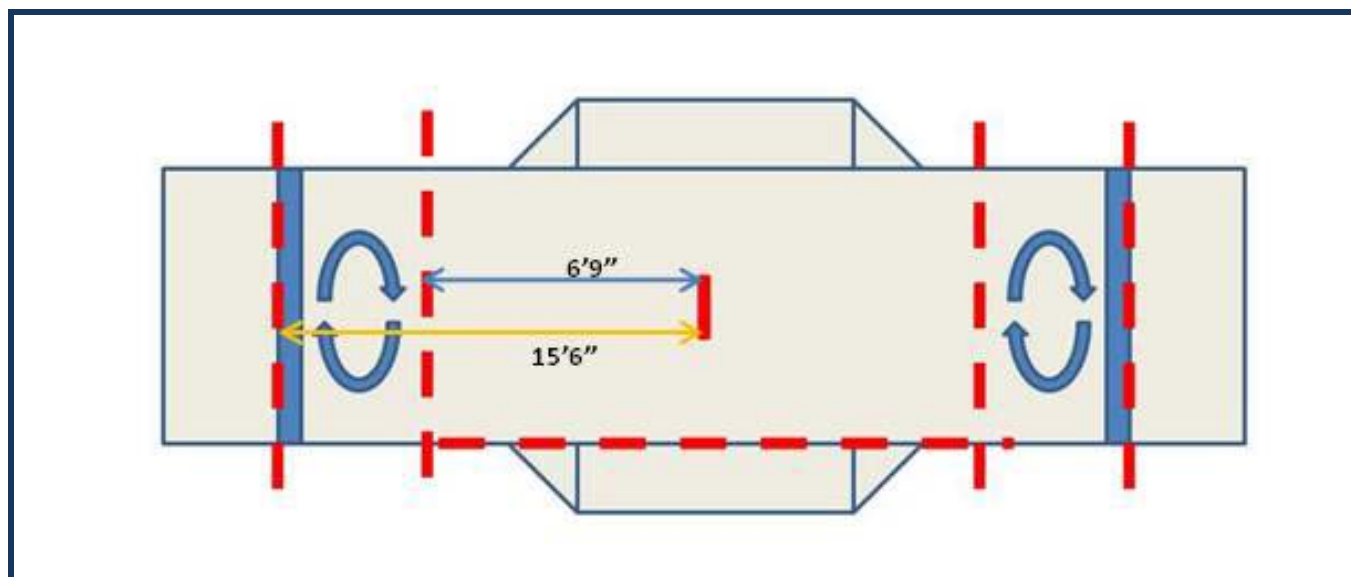


Figure 1 – Red dashed lines are razor saw cuts.

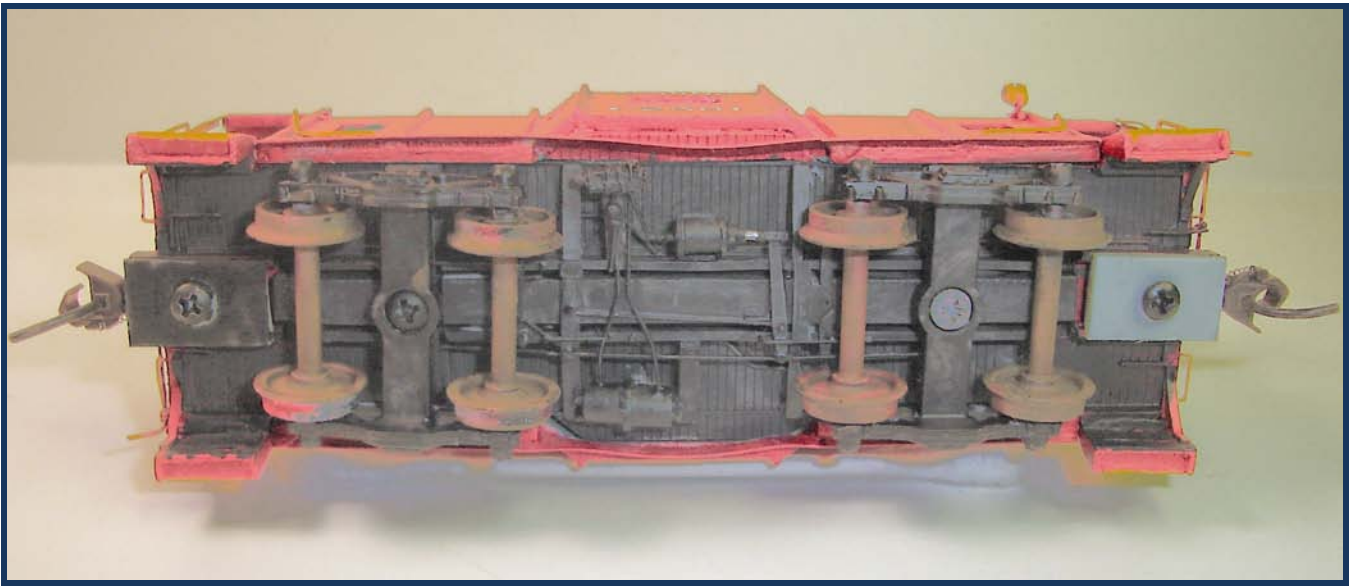


Figure 2 - Note wave in skirt – this one is too long. Also note brake levers bind with wheels. Note red portion of floor under (top) bay window – this is the cut off and saved section.

Using a razor saw, cut the portion of the floor under one bay window off even with the sides of the long part of the underframe. (Again, refer to Figure 1.) There will be one flat side and one bay window side. Retain the piece of the floor for later (it will become obvious why it had to be cut off). Complete the underframe per the instructions, but check clearances of the brake levers against the inside of the wheels. Install the trucks between brake rigging installation steps to make sure they still swing without binding. With the new shorter wheelbase, they won't fit as designed, so modify as necessary. The double-ended lever with the fulcrum in the middle is a particular troublemaker.

The carbody is basically the same as the I-12 except for the "skirt". In the available photos, this appears to be a thin strip of metal, not a solid triangular beam.

Using a razor saw, very carefully cut a slot for the skirt in the outermost wagontop rib on one end of the car, making sure the cut is 45 degrees from the plane of the side sheet. Start at the very point of the rib and cut until the blade almost contacts the side sheet, but NOT QUITE. Be careful not to twist the saw so as not to snap off the small remaining piece on the underside of the cut. Use this first cut as a guide to hold the saw in the proper position and start on the second and third rib. Flip the car around and do the same on the other 3 quadrants. Insert the razor saw blade so that it is in all 6 ribs at the same time and complete the cut all the way to the plane of the side sheet. Insert a strip of .015 x .100 strip styrene in the slot to form the skirt. Leave plenty of extra on the ends. It won't be trimmed to fit until the steps are added later.



Figure 3 - Note styrene strip installed in razor saw cuts and wider steps.

Next is the addition of the roof walk. Using the kit's roof walk as a pattern, trace the outline on diamond plate stock. Use Plano #208 which is about .020" brass etched with an A.W. (Alan Wood) Diamond Pattern. Important: both the stock and the pattern must be upside down to draw on the smooth side. Check it before cutting because it is an expensive mistake. Cut inside the lines with a good pair of scissors and dress up with a jeweler's file. The

scissors action will cause the roof walk to curl, so take the time to flatten it back out. Drill holes for the end walk grab irons and bend the grabs from .010" brass wire. Bend the end walk supports from flat brass bar stock and solder to the underside of the piece. Place an alligator clip over the supports to act as a heat sink and solder the grab to the roofwalk from underneath.



Figure 4 - Plano Diamond Safety Tread roof walk installed with end grab only (no side grab).

Finish the carbody as directed in the instructions. Note that the side grabs are unique to C-2501. They are neither the quarter circle nor the L shape found on

various I-5 or I-12 class cars. These are more of a near L shape about 20 degrees from vertical. These

are bent from brass wire, as are the ones on the end of the car.

As adumbrated earlier, this caboose had the slot-back vertical step used on full width platforms, but in the photos they appeared several inches wider than those used on the I-5 and I-12 classes. This model incorporates cast metal steps harvested from an old Silver Streak kit. They are a little thicker than the superb castings in the PMSS kit, but are wider.

Chose the steps you prefer and install to the sides of the underframe. Don't forget to add the diagonal braces behind the step castings. Those on this model are bent from flat brass bar stock and add considerable strength to the assembly.

Now it is time to test-fit the underframe to the carbody. The styrene skirt will block normal installation of the underframe, hence the piece of the bay window floor being cut off. If the skirt is too long, it will force a wave in the skirt under the bay window. See Figure 2. Once it all fits, glue the skirt into the cuts, making the skirt touch the edge of the step casting, but just barely. Using a pin or piece of wire, transfer small dabs of ACC under the skirt to fill any gaps between the skirt and the side sheet. DO NOT glue the underframe in place yet to allow for painting.

Final details on the sides of the body are the Cal Scale marker lamps on one end (with the electric wire filed off) and the empty marker lamp brackets on the other end. To finish the ends, bend the stainless etchings as directed and attach to the end of the underframe. If modeling the brake wheels facing outward, use the resin casting of the brake wheel stand, cut off the legs, and replace with brass angle. Glue to the back of the etching. Glue the Tichy Atlas brake housing to the outside of the etching. Finish off with the etched brake wheel. Repeat for the other end. If modeling the later brake wheel-in configuration, do this step following the kit's instructions.

Real detail hounds can add cut levers and the chain from the handrail to the cut lever. Since it is impossible to drill the stainless steel etching, eyebolts can't be used to attach the cut levers. Brackets must be manufactured from flat brass bar stock, in the shape of a capital letter P. Make a 90 degree bend in the bar, lay a wire in the bend, and force the bend

List of Materials

PMSS I-12 Caboose Kit #CHK-6 (When introduced the Smoky Mountain I-12 can be substituted)

Cal Scale Old Fashioned Marker Light Loco # 190-312

Custom Finishes by Bob Rzasa Marker Light Bracket #B-179

over with pliers to final shape. Glue to the end beam with CA.



Figure 5 - Note brake wheel facing out, chain from handrail to cut lever, and diagonal braces from steps to end sill. And look, no ladder extensions above the end walk.

Remove the underframe, **prime** and paint. Note prime is emphasized to help with final paint color adhesion (read the first PMSS product review in the Third Quarter 2002 *Sentinel* issue). Floquil's Caboose Red is a good match for a newly painted car. The yellow safety equipment highlights are Badger D&RGW Yellow applied with a very small brush.

The decals used are a hodgepodge from a number of PMSS kits. The smaller font for the A in the subclass designation came from an I-17A kit. The I-5 came from one of the variations of I-5 kits from PMSS. The roadname and number came from the I-12 kit.

After everything is dry, apply the window glazing with Microscale Krystal Kleer and reinstall the floor, including the little piece under the bay window. Install the couplers, take a few pictures to post on the Yahoo group and put this model of a one-of-a-kind prototype into service on your layout.

Detail Associates .010 Brass Wire #2503
Detail Associates .015 Brass Wire #2505
Detail Associates .015 x .042 Flat Brass Bar #2528
Evergreen .015 x .100 Styrene Strip
Small Brass Chain
Couplers of Choice
Plano Model Products HO Diamond Safety Tread #208
Structural Shapes of Brass 3/64" Brass Angle #A-1x

MODELING A 1947 B&O CONCRETE AND STEEL COAL DUMP TRESTLE

BY ED BOMMER

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



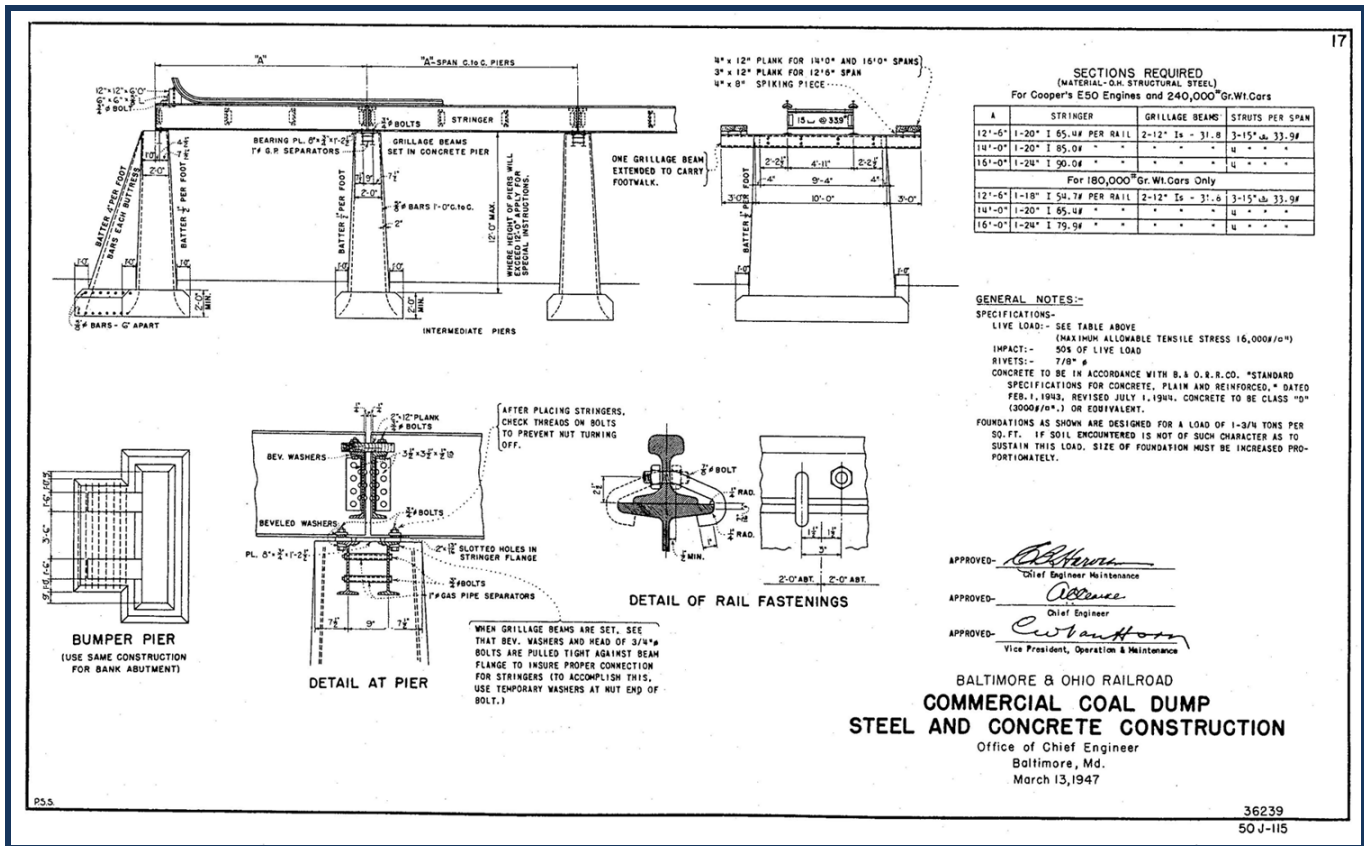
Introduction

As the timber coal dump trestles at local coal dealers became weak and unsafe with age, a number of them along the B&O were replaced with a modern concrete and steel design. Anthracite coal for household and small business use was shipped in carload lots in various sizes. The largest was lump. This was followed by egg, nut, pea, rice and buckwheat, each smaller than the last. Those who had automatic stokers generally used smaller sizes of coal. It was popular but also more expensive. A small yard usually sold a few sizes of coal, each dumped into a separate trestle bay.

Hoppers on these trestles were mixed among the various regional anthracite carriers. In the northeast metropolitan area on the B&O and its subsidiaries, they mainly included CNJ, LV, PRR and RDG cars. In western New York, anthracite hoppers from Erie,

D&H and D&LW would more likely be seen. Hoppers of the B&O, C&O, or N&W were not usually seen at anthracite dealers, since those roads were primarily hauled bituminous coal.

To be sure, there could be exceptions! This short coal dump models a dealer who gets one or two hoppers at a time. The end section was always a problem. A dealer had to pay for it of course. Yet it was rarely ever used for coal unless an end-dumping hopper car could fill it. So that end space was sometimes used for storage. Dump trestles at larger dealers might hold as many as four or five cars. However, many large dealers used a dump pit and storage silos for their coal. By the late 1950's, the market for anthracite declined steeply in the growth of oil and gas for home heating and small businesses.



B&O concrete and steel commercial coal dump trestle from the 1945-1955 B&O Maintenance of Way book. B&O Railroad Historical Society Reprint.

Modeling

While I am an O scale modeler, my guidance is not specific to building an O scale, but can be translated into your favorite scale using materials scaled appropriately. Plastic shapes, wood, and code 125 rails were used for this model. Most of the dimensions shown are prototype sizes. Three changes were made to simplify building it: First, instead of the grillage (transverse) beams being embedded into the tops of the concrete supports, they were instead mounted on top of them. Secondly, for the back-to-back twin grillage "I" beams, a single thick "I" beam is used. And rather than taper all the faces of the concrete supports, only their narrow sides are tapered. The heights of concrete supports depend upon the layout setting. They were made so the track would be at the same height as the siding. Coal dump trestles were usually 6' to 12' high, from the

ground to the underside of the stringers. Depending on the scale you model, other changes may make construction easier for you.

The concrete supports were painted a "new concrete" color. In this case, a quart of inexpensive paint mixed to a color called "Sahara Sand". Thin washes of black acrylic artists paint were wiped over each support to give a dirty, streaked look.

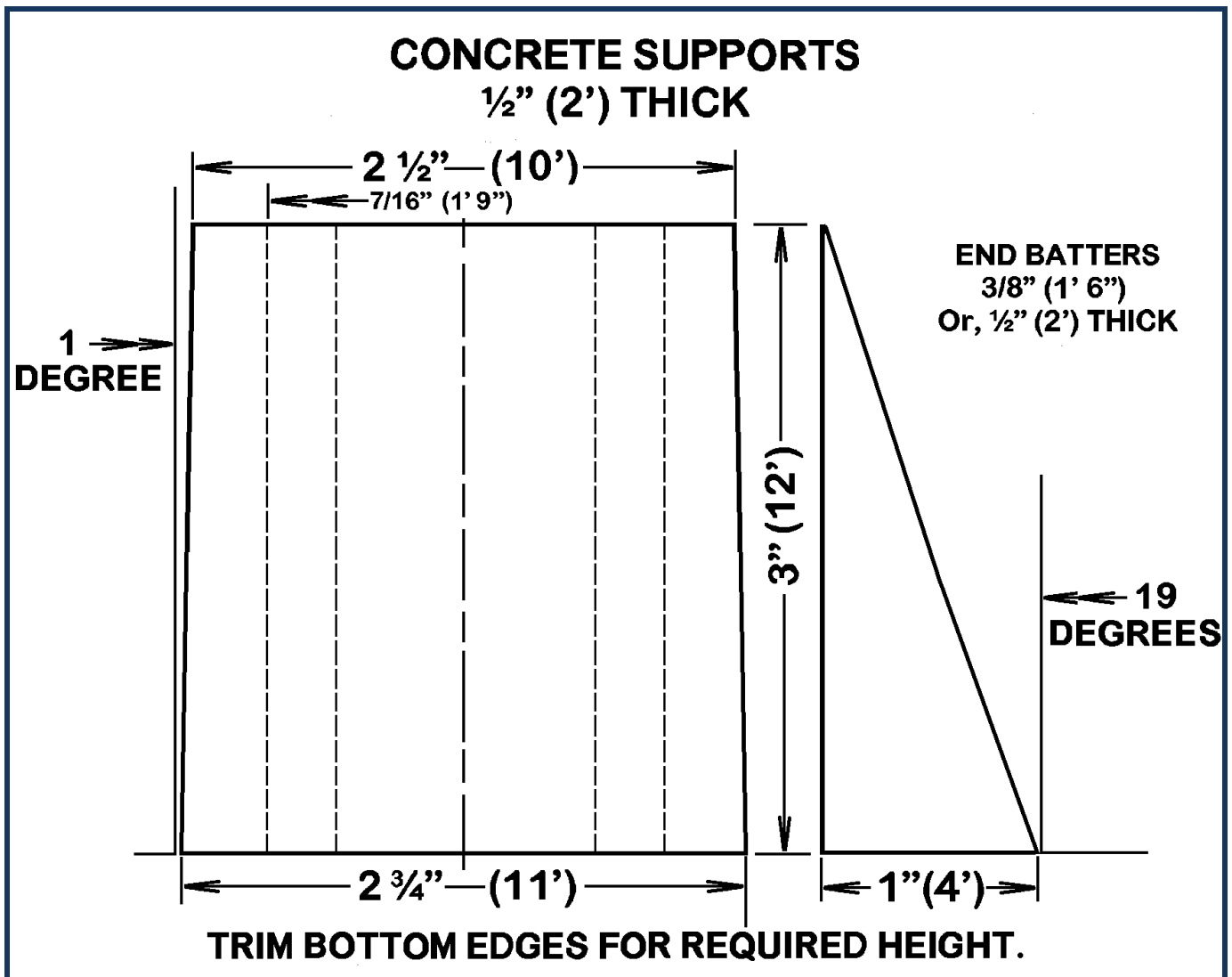
"Table A" of the B&O plan was used to build a trestle having 15' spans. The stringers are 24" deep. The struts or spreaders are 15" and the grillage beams are 12". Instead of trying to model back-to-back "I" beams for the grillage, they were made with 16' lengths of Plastruct's heavier ABS "I" beam.



This trestle can hold up to two 50 ton twin hopper cars. They dump into the three bays to the right. The end bay might require an end dumping hopper car to fill it.



Overhead view, showing the grillage beams on top of the supports, with struts between the stringers supporting the rails. Foot walk on both sides of the dump track is made with 4" x 12" planking.



Half-inch thick poplar was used to make the O scale trestle supports. It is smooth, works nicely and takes paint well. Five identical supports were cut with a radial arm saw, as were the two batters on the end support. Dimensions in brackets are prototype sizes.

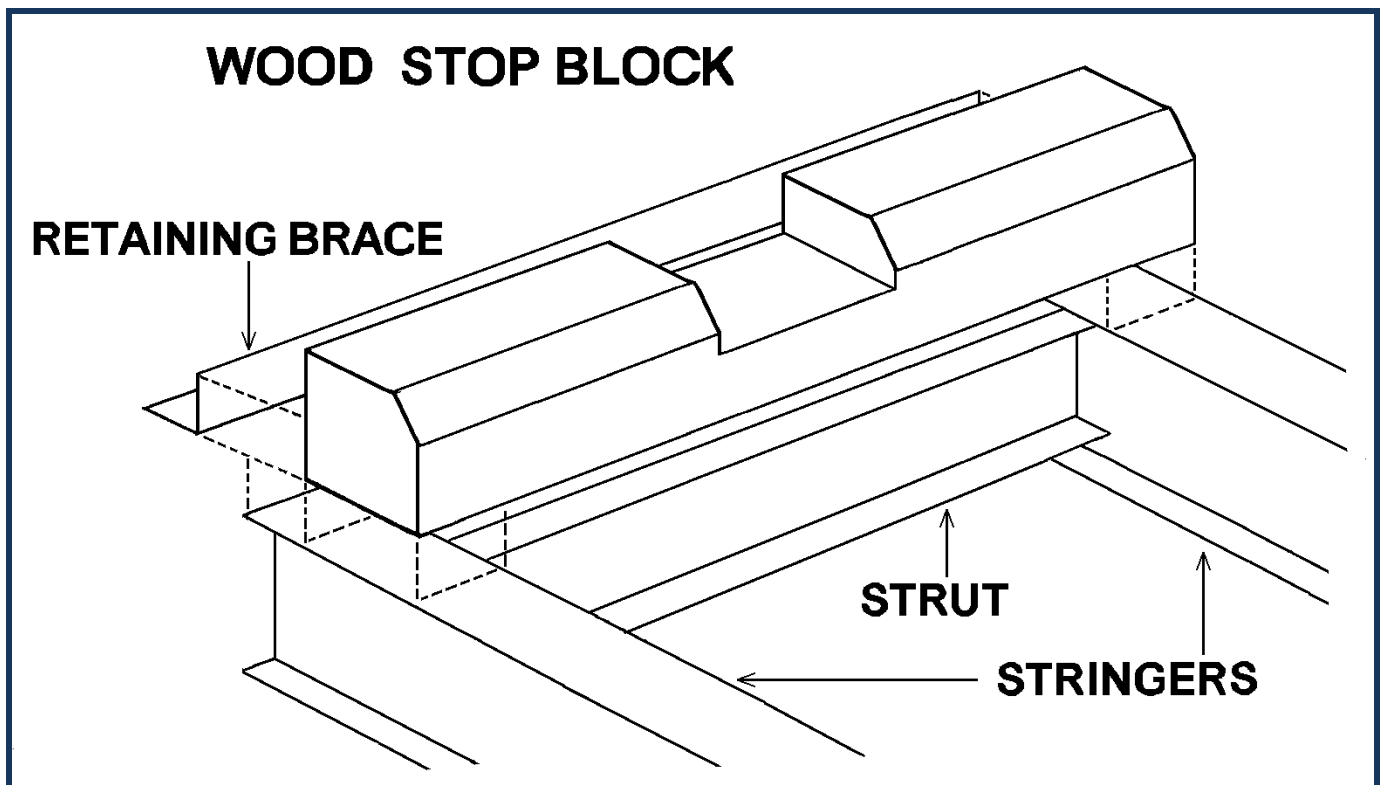
If necessary, the trestle can be made longer to fit your space. Preferably it should be in multiples of two-bay hopper cars. The 24" styrene "I" beam stringers are 60' long. One can add to that length by butt-cementing additional "I" beam lengths needed. The joints must be located where they will be on top of a grillage beam. Splice plates of .020" thick styrene can be cemented over the butt joint's outer side to reinforce it. Stagger those extension joints so they

will not rest the same grillage beam. Make sure the end cuts are square and true.

Rails were cut about two inches longer than the trestle. This allows them to be spiked to the siding roadbed beyond the trestle. The outer rail ends are curved upward, following the B&O diagram. This is done by clamping the rail in a vise and heating the end to be bent with a torch until it glowed yellow.



To bend the rail ends like the B&O plan, they must be heated until they glow yellow. While keeping it hot, very slowly curl the rail end up. Because the rail head is being compressed as the web and foot are stretched, the rail will tend to twist. Work slowly and carefully.



The wood stop block behind the bent up rail ends is a 12" x 12" timber, chamfered 4" on the edge where the rail ends rest. A 6" x 6" steel angle serves as retaining brace. The notch in the stop block was cut to clear a Kadee coupler pin.

The struts are spacers cemented between the stringers. They are made from 15" styrene channel cut to length so that the stringers are centered under correctly gauged rails. Test fit the first strut. I used a short scrap of prefab track for this. Struts are located over each concrete support. There are two others evenly spaced between them. Check the diagram to be certain which way each strut channel faces. Cut as many as needed for your trestle, taking care that they are exactly the same length and have square-cut ends.

The grillage, or transverse beams follow. One sits on top of each concrete support. They are made from 12" ABS "I" beams cut 16' long. Cement one to each end of the stringer assembly. Be certain they are squared and centered for the concrete supports. This is a bit of fussy work. Using a small machinist's square and ruler helps the finished result look best. The steel framing is now ready for paint. Rustoleum high-heat resisting flat black spray paint was used. It

dries quickly to a flat, dark charcoal tone and does not harm styrene. Due to all the little nooks and crannies in this assembly, it took a two or three coats with adequate drying time between, to make sure everything got covered.

After the paint has dried, weathering and rusty streaks can be applied to the steel work with chalks. Cement the finished concrete supports to the underside of the grillage beams. Take care that they are set square and have equal overhang on both sides. Last, paint the sides of the rails to weather them. Or if pre-weathered, touch up the heated and bent ends. Make sure the rail bottoms are clean, as they will be glued onto the stringers. Using a track gauge, cement the rails to the "I" beam stringers. I used Walthers GOO with a Micro-tip. The curved ends of the rails must rest against the chamfered edge of the stop block and be of equal height.



Completed B&O designed coal dump trestle. While the B&O plan does not include railings and end ladders, some were so equipped to meet local building codes.

To install the trestle on the layout, the rails were temporarily connected to the siding. Cardstock shims were made to make sure all the concrete supports evenly touched the sub-base. Lines were drawn

around each concrete support and the trestle was removed. Holes to clear a # 4 wood screw were drilled through two of the marked off support spaces. The trestle was then replaced.

Working alone, a 9 lb hunk of B&O rail used as an anvil was placed on the trestle. This held it in

position as pilot holes for the mounting screws were drilled into the two supports from underneath and the screws driven in.



To single-handedly anchor the coal trestle to the layout, this piece of B&O rail held it in place as the screws were tightened from underneath.

The trestle rails were then spiked in place on the embankment. A bit of touch-up for the ballast was done. With some thinned white glue and a small brush, scattered model coal was added to the setting.

Coal piles under the trestle were made with index cards cut and shaped to make a low cone. After a

coat of flat black paint, model coal was glued to the surface. Spilled coal was added to the tops of the struts between the stringers and tops of the concrete supports. Still needed is the equipment shed, fencing and a few more details to complete this coal yard.

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